

To: T10 Technical Committee
From: Rob Elliott, HP (elliott@hp.com)
Date: 17 July 2006
Subject: 06-321r1 SPC-4 Statistics and Performance log pages command cleanup

Revision history

Revision 0 (6 July 2006) First revision

Revision 1 (17 July 2006) Incorporated comments from July 2006 CAP WG

Related documents

spc4r05a - SCSI Primary Commands - 4 (SPC-4) revision 5a

05-248r4 Statistics and Performance log pages (George Penokie, IBM) - incorporated into spc4r05a

06-337r1 Statistics Group Number inconsistencies in SPC-4, SSC-3, and MMC-5 (Ralph Weber, ENDL)
(accepted by July 2006 CAP WG for spc4r06)

Overview

The list of read and write commands includes the SBC-3 XDWRITE and XDREAD commands, but does not include XDWRITEREAD and XPWRITE.

Rather than add those, this proposal removes XDWRITE and XDREAD from the list. XDWRITE performs a read and write from medium, not just a write, so is not a very good fit for the write command category. The XDREAD command performs no media access at all - it just reads from a buffer.

The XOR commands can be added later in a separate log parameter if wanted.

Suggested changes to SPC-4

7.2.12 Statistics and Performance log pages

7.2.12.1 Statistics and Performance log pages overview

The Statistics and Performance log pages consist of a General Statistics and Performance log page and up to 31 Group Statistics and Performance log pages. Each Group Statistics and Performance log pages only collects statistics and performance information for the group number specified in a read CDB or a write CDB.

The General Statistics and Performance log page (see 7.2.12.2) provides the following statistics and performance results associated to the addressed logical unit:

- a) Number of read commands;
- b) Number of write commands;
- c) Number of read logical blocks transmitted by a target port;
- d) Number of write logical blocks received by a target port;
- e) Read command processing time;
- f) Write command processing time;
- g) Sum of the command weights of the read commands plus write commands;
- h) Sum of the weighted command time of the read commands plus write commands;
- i) Idle time; and
- j) Time interval.

The Group Statistics and Performance log pages (see 7.2.12.3) provide the following statistics and performance results associated to the addressed logical unit and the GROUP NUMBER field:

- a) Number of read commands;
- b) Number of write commands;
- c) Number of read logical blocks transmitted by a target port;
- d) Number of write logical blocks received by a target port;
- e) Read command processing time; and
- f) Write command processing time.

In the Statistics and Performance log pages, read and write commands are those shown in table 235.

Table 235 — Statistics and Performance log pages read and write commands

Read commands_ ^a	Write commands_ ^a
READ(6) READ(10) READ(12) READ(16) READ(32) READ CD READ CD MSF READ REVERSE(16) XDREAD(10) XDREAD(32)	WRITE(6) WRITE(10) WRITE(12) WRITE(16) WRITE(32) WRITE AND VERIFY(10) WRITE AND VERIFY(12) WRITE AND VERIFY(16) WRITE AND VERIFY(32) XDWRITE(10) XDWRITE(32)
^a See SBC-3.	

7.2.12.2 General Statistics and Performance log page

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7.2.12.3 Group Statistics and Performance (n) log page

The Group Statistics and Performance (n) log pages (see table 242) provide logging of statistics and performance of read and write operations based on group numbers. There are 31 Group Statistics and Performance (n) log pages one for each group number. The statistics and performance information associated with each group number is collected in the corresponding Group Statistics and Performance (n) log page (e.g., operations associated with group number 16 are logged in the Group Statistics and Performance (16) log page).

Table 242 — Group Statistics and Performance log page

Byte\Bit	7	6	5	4	3	2	1	0
0	DS	SPF (1b)	PAGE CODE (19h)					
1	SUBPAGE CODE (01h - 1Fh)							
2	(MSB)	PAGE LENGTH (34h)						
3								(LSB)
Group Statistics and Performance log parameters								
4	Group n Statistics and Performance log parameter							
55								

The DS bit, SPF bit, PAGE CODE field, and PAGE LENGTH field are described in 7.2.1.

The SUBPAGE CODE field is described in table 243.

Table 243 — Group Statistics and Performance (n) subpage codes

Subpage code	Log page name ^a	Group number ^b
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<p>^a The statistics and performance information associated with a group number is collected in the corresponding Group Statistics and Performance (n) log page (e.g., operations associated with group number 10000b are logged in the Group Statistics and Performance (16) log page).</p> <p>^b The GROUP NUMBER field is from the read command CDB or the write command CDB (see table 235 in 7.2.12.1 and SBC-3 and MMC-6).</p>		

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